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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/842,098	04/25/2001	Dmitri V. Vezenov	CALIME.007A	6955

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EXAMINER

ORTIZ CRIADO, JORGE L

ART UNIT	PAPER NUMBER
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2655

DATE MAILED: 03/10/2004

10

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/842,098

Applicant(s)

VEZENOV ET AL.

Examiner

Jorge L Ortiz-Criado

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claim 24 and 25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 24 and 25 recites the limitation "said first micro-lens" in the second line of the claims. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claims 1-14 and 26 are rejected under 35 U.S.C. 102(e) as being anticipated by Guerra U.S. Patent No. 6,115,348.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37

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CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Regarding claim 1, Guerra discloses an optical data storage medium (See Abstract) comprising:

a storage layer having one or more data storage tracks thereon which define a data track pitch (See col. 6, lines 7-18; col. 6, lines 48-64; Figs. 8,11), and

a micro-lens array positioned proximate to said one or more data storage tracks (See col. 10, lines 6-20; Figs. 19,20),

wherein said micro-lens array comprises a periodic structure defining at least first and second repeating periods (See Figs.19,20),and

said periodic structure induces a virtual track (i.e. "micro-optical elements have regular alternating perturbations of their topographical geometrical characteristics so as to introduce a period into overall disk structure that is larger than the size of the actual data track pitch")

having a pitch which is different than said data track pitch (See col. 6, lines 49-64; col. 10, lines 6-20; Figs. 11, 19, 20) and

said first repeating period is twice the width of said second repeating period (See Fig. 19)

Regarding claim 2, Guerra discloses wherein said micro-lens array comprises first and second interleaved lenses (See Figs. 19,20).

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Regarding claim 3, Guerra discloses wherein said interleaved lenses are spiral lenses (See col. 3, lines 21-34)

Regarding claim 4, Guerra discloses wherein said first lens is taller than said second lens (See col. 10, lines 6-20; Fig. 19).

Regarding claim 5, Guerra discloses wherein said first lens is wider than said second lens (See col. 10, lines 6-20; Fig. 20).

Regarding claim 6, Guerra discloses wherein said first lens is disposed a first distance from said second lens in a first direction and said first lens is disposed a second distance from said second lens in a second direction (See col. 10, lines 6-20; Figs. 19,20).

Regarding claim 7, Guerra discloses wherein said micro-lens array comprises a single lens (See col. 3, lines 21-34; col. 10, lines 6-20; Figs. 19,20).

Regarding claim 8, Guerra discloses wherein said lens is a spiral lens (See col. 3, lines 21-34; col. 10, lines 6-20; Figs. 19,20).

Regarding claim 9, Guerra discloses wherein a portion of said spiral lens located between first and second adjacent portions is disposed a first distance from an adjacent portion in a first

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direction and is disposed a second distance from an adjacent portion in a second direction (See col. 3, lines 21-34; col. 10, lines 6-20; Figs. 19,20).

Regarding claim 10, Guerra discloses wherein a first portion of said single spiral lens is taller than a second portion of said single spiral lens (See col. 3, lines 21-34; col. 10, lines 6-20; Figs. 19,20).

Regarding claim 11, Guerra discloses wherein a first portion of said single spiral lens is wider than a second portion of said single spiral lens (See col. 3, lines 21-34; col. 10, lines 6-20; Figs. 19,20).

Regarding claim 12, Guerra discloses wherein said micro-lens array comprises a series of concentric circular lenses (See col. 3, lines 21-34; col. 10, lines 6-20; Figs. 19,20).

Regarding claim 13, Guerra discloses wherein a first portion of said lenses have a first height and a second portion of said lenses have a second height (See col. 3, lines 21-34; col. 10, lines 6-20; Figs. 19,20).

Regarding claim 14, Guerra discloses wherein a first portion of said lenses have a first width and a second portion of said lenses have a second width (See col. 3, lines 21-34; col. 10, lines 6-20; Figs. 19,20).

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Regarding claim 26, Guerra discloses wherein said medium is read using a conventional DVD drive (See col.5, lines 14-17; col. 6, lines 48-64)

4. Claims 15-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Kobayashi U.S. Patent No. 6,226,248.

Regarding claim 15-, Kobayashi discloses an optical storage device (See Abstract) comprising:

a far field optical pick-up unit (See Fig. 18, ref# 42)
and an optical data storage medium (See Fig. 1), said optical data storage medium comprising:
a storage layer (See Fig. Col. 4, lines 1-3); and
a plurality of adjacent track portions for storing optical artifacts on said storage layer (See col. 4, lines 28-40),

wherein said track portions define a radial track pitch of $N/2$ microns (See col. 7, lines 25-36; col. 8, lines 1-12; Figs. 1,19 $N/2 = 0.5$ microns), and wherein said optical artifacts are readable by an optical drive configured for tracking an N micron track pitch (See col. 7, lines 25-36; col. 8, lines 1-12; Figs. 1,19 system configured to read two tracks at same time, N microns $0.5 * 2 = 1.0$ microns).

Regarding claim 16, Kobayashi discloses wherein N is approximately 0.74 micrometers (See Fig. 1, $N = 0.5 \approx 0.74$)

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Regarding claim 17, Kobayashi discloses wherein said plurality of adjacent track portions are formed from two interleaved spiral tracks (See col. 4, lines 28-40; Figs. 1,19).

Regarding claim 18, Kobayashi discloses wherein said plurality of adjacent track portions are formed from a plurality of unconnected concentric circular tracks (See col. 4, lines 28-40; Figs. 1,19; unconnected inherently to Kobayashi, adjacent tracks with pit without overlapping spiral tracks).

Regarding claim 19, Kobayashi discloses wherein said plurality of adjacent track portions are formed from a single spiral track (See col. 3, lines 21-34; (See col. 4, lines 28-40; Figs. 1,19)

Regarding claim 21, Kobayashi discloses an optical storage medium (See Fig. 1,19) comprising:

a first track for recording optical artifacts having a track pitch of N microns (See col. 4, lines 28-40; Fig. 1,19 distance between even tracks and odd tracks is N in the spiral tracks);

a second track for recording optical artifacts having a track pitch of N microns (See distance between even tracks and odd tracks is N in the spiral tracks);

wherein said first track and said second track are interleaved such that there is an average track pitch of $N/2$ microns between said first and second tracks (See col. 4, lines 28-40; Figs. 1,19 average distance between even tracks and odd tracks is $N/2$)

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Regarding claim 22, Kobayashi discloses wherein said first track is disposed a first distance from said second track in a first direction and said first track is disposed a second distance from said second track in a second direction (See Figs. 1,19)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 20, 22-25 are rejected under 35 U.S.C. 103(a) as being obvious over Kobayashi U.S. Patent No. 6,226,248 in view of Guerra U.S. Patent No. 6,115,348.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in

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the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Kobayashi discloses all the limitations based on claim 15 and 21 as outlined above. But Kobayashi fails to disclose wherein at least some of said adjacent track portions are positioned beneath a micro-lens superstructure, and wherein different portions of said superstructure over different adjacent tracks have different physical characteristics; wherein said first and second tracks are positioned beneath a first and second micro-lens, respectively; wherein said first micro-lens has a first height and said second track has a second height; wherein said first micro-lens has a first shape and said second micro-lens has a second shape

However this feature is well known in the art as evinced by Guerra, which discloses adjacent track portions are positioned beneath a micro-lens superstructure (See col. 10, lines 6-20; Figs. 19, 20), and wherein different portions of said superstructure over different adjacent tracks have different physical characteristics (See col.6, lines 7-64; col. 10, lines 6-20; Figs. 11,19,20); said first and second tracks are positioned beneath a first and second micro-lens, respectively (See col. 10, lines 6-20; Figs. 19, 20); said first micro-lens has a first height and said second track has a second height (See col. 10, lines 6-20; Figs. 19); said first micro-lens

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has a first shape and said second micro-lens has a second shape (See col. 10, lines 6-20; Figs. 19).

It would have been obvious to one with ordinary skill in the art at the time of the invention to provide adjacent track portions are positioned beneath a micro-lens superstructure wherein different portions of said superstructure over different adjacent tracks have different physical characteristics, in order to increase the resolution and information storage density as suggested by Guerra.

Response to Arguments

6. Applicant's arguments filed 12/18/2003 have been fully considered but they are not persuasive.

Applicant's response to the rejection of claims 1-14 and 26, as unpatentable over Guerra.

Applicants argued that Guerra does not teach or suggest a virtual track and/or a first repeating period twice the width of said second repeating period.

The Examiner cannot concur because a virtual track as disclosed by Applicant's specifications is (i.e. "micro-optical elements have regular alternating perturbations of their topographical geometrical characteristics so as to introduce a period into overall disk structure that is larger than the size of the actual data track pitch"), and Guerra teaches the micro-optical elements with regular alternating periods (See col. 10, lines 6-20; Figs. 19,20),

Guerra discloses at least two repeating periods in Fig. 19 and disclosed in col. 10, lines 6-20; ref# 231 and 233; Clearly three periods are shown and by dividing the periods in intervals of

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N, the first period would have a width of $N/3$ the second period would have a width of $2N/3$ and the third period $3N/3 = N$, therefore at least one of the periods "the second" would have twice the width of the first one (i.e. $2N/3 > N/3$), hence Guerra teaches having a first period with twice the width of the second period.

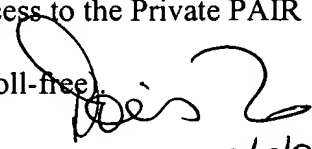
7. Applicant's arguments with respect to claims 15-25 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jorge L Ortiz-Criado whose telephone number is (703) 305-8323. The examiner can normally be reached on Mon.-Thu.(8:30 am - 6:00 pm), Alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris H To can be reached on (703) 305-4827. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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